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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/253,245	02/19/99	HARPELL	G 30-4496

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EXAMINER

COLE, E

ART UNIT	PAPER NUMBER
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1771


11

DATE MAILED:

01/17/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	Application No. <b>09/253,245</b>	Applicant(s) <b>Harpell et al</b>	
	Examiner <b>Elizabeth M. Cole</b>	Group Art Unit <b>1771</b>	

☒ Responsive to communication(s) filed on Oct 12, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

**Disposition of Claims**

☒ Claim(s) 1-26 is/are pending in the application.

Of the above, claim(s) 24-26 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-23 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

**Application Papers**

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 9

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. Applicant's election without traverse of claims 1-23 in Paper No. 9 is acknowledged.
2. Claims 7, 8, 9, 14, 21 and 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7-9 recite an "ultra high molecular weight polyethylene" and/or an "ultra high molecular weight polypropylene". This renders these claims indefinite because it is not clear whether this is referring to weight average or number average molecular weight.

3. The term "robust structure of filaments" in claim 14 is a relative term which renders the claim indefinite. The term "robust structure of filaments" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what would be considered a robust structure. Does this refer to the strength of the composite material as a whole, the strength of the bonds between individual filaments, etc.

4. In claim 21, the recitation that the composite possess at least 70% flexibility of an uncoated, ballistically effective fabric renders the claim indefinite because it is not clear what fabric the claimed material is being compared to.

5. In claims 22 and 23, it is not clear how the flexibility is being measured since there are no units.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 7, 11-12, 14-15, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Schirtzinger, U.S. Patent No. 3,686,048. Schirtzinger discloses a material comprising a plurality of glass fibers which are aligned in a parallel direction and which are held in place by discrete matrix islands formed from an elastomer. See col. 3, line 9 - col. 4, line 56.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schirtzinger, U.S. Patent No. 3,686,048 in view of WO 91/08895 to Li et al. Schirtzinger discloses a material as set forth above. Schirtzinger differs from the claimed material because Schirtzinger et al does not teach the other types of fibers claimed and because Schirtzinger does not teach the claimed ratio of matrix to fibers or the size of the matrix islands. With regard to the types of fibers, Li et al teaches that fibers such as high molecular weight polyethylene, high molecular weight polypropylene and aramid fibers are equivalent to glass fibers for preparing composite materials. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed fibers such as high molecular weight polyethylene or polypropylene

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or aramid fibers instead of the glass fibers in the material of Schirtzinger. One of ordinary skill in the art would have been motivated to employ the fibers of Li in the material of Schirtzinger since the fibers are taught as being useful in forming composite materials. Since Li teaches the same fibers as the claimed fibers, the fibers of Li would inherently possess the claimed properties such as tenacity and modulus. With regard to the amount of resin employed, although Schirtzinger does not specify the amount, Schirtzinger clearly teaches that enough resin should be used to form a strong fiber array without employing excess resin which would prevent the passage of the resin which is used to form the composite material from fully penetrating the fiber array. See col. 4, lines 23-56. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the amount of resin employed to form the resin bridges through the process of routine experimentation so that an optimum amount of resin was used which allowed for both the formation of a strong array of fibers and the fully impregnation of the fiber array with the resin used to make the composite material.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (703) 308-0037. The examiner may be reached between 6:30 AM and 5:00 PM Monday through Thursday.

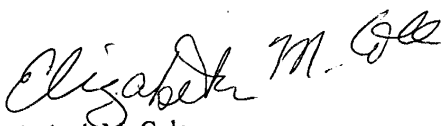
Mr. Terrel Morris, the examiner's supervisor, may be reached at (703) 308-2414.

Inquiries of a general nature may be directed to the Group Receptionist whose telephone number is (703) 308-0661.

The fax number for official faxes is (703) 872-9310. The fax number for official after final faxes is (703) 872-9311. The fax number for unofficial faxes is (703) 305-5436.

Serial Number: 09/253,245

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Elizabeth M. Cole  
Primary Examiner  
Art Unit 1771

e.m.c  
December 12, 2000